

6/5/81

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

IN THE MATTER OF:

THE CINCINNATI GAS & ELECTRIC  
COMPANY, et al.,  
(William H. Zimmer Nuclear Power  
Station)

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: DOCKET NO: 50-358  
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MIAMI VALLEY POWER PROJECT'S PROPOSED FINDINGS  
OF FACT AND CONCLUSIONS OF LAW IN THE FORM OF  
AN INITIAL DECISION

The Miami Valley Power Project, an intervenor in the captioned proceeding, in accordance with 10 CFR Section 2.754 and the Atomic Safety and Licensing Board's Schedule for Filing Proposed Findings and Conclusions of March 20, 1981, hereby submits the attached proposed findings of fact and conclusions of law in the form of an initial decision with respect to those issues for which the hearing has been completed.

Respectfully submitted,



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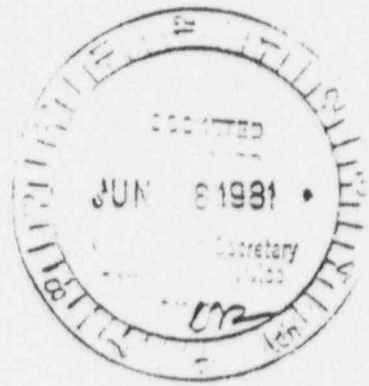
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PROPOSED FINDINGS OF FACT AND CONCLUSIONS  
OF LAW SUBMITTED BY MVPP



FINDINGS OF FACT

Contention 14

Cable trays containing electrical wires have been inadequately welded by improperly qualified welders, contrary to NRC regulations. More specifically, three piece verticals and two piece channels were welded by people not fully ASME certified. These welders were not consistently able to produce a quality weld with good fusion, a situation aggravated by Husky Product's incentive system which induced quick blasting techniques to be employed. Further disregarding standard procedures production welding techniques and test welding techniques were not identical. Any meaningful inspection of the crucial three piece vertical welds is impossible because the trays have been galvanized. Therefore, the existing system of cable trays must be dismantled and a new set, welded by fully certified welders, installed.

1. Cable trays used at the Zimmer Nuclear Power Station (Zimmer) were manufactured by the Husky Corporation.
2. Welders employed by the Husky Corporation to work on the Zimmer cable trays were not qualified to weld cable trays to be used at Zimmer. This finding of fact is supported by the following testimony:
  - a. Fred Banta, a representative of the Husky Corporation, and a witness for the Applicants, testified that he is not

sure whether all welders passed qualification tests required by the company's quality control system to insure quality welds (T 1027-1028). He further testified that an internal audit of the company (Husky) revealed that two of the welders on the Zimmer job performed welds on that job before they were qualified to do so. (T 1044). Mr. Banta further testified that Husky's welders were not skilled enough for the entire welding procedure to qualify. (T 1008)

b. Ed Hofstadter, a former employee of the Husky Corporation, testified for MVPP. Mr. Hofstadter worked at Husky during the period in which the cable trays for Zimmer were constructed. During his tenure at Husky, Mr. Hofstadter was employed as manager of Industrial Engineering. As such, he was in a position to know of any problems concerning the qualifications of welders on the Zimmer job. Mr. Hofstadter testified that none of the welders at Husky were certified to perform welds on the Zimmer cable trays before they actually performed such work. By the term "certification," Mr. Hofstadter clearly meant to say that the welders had not yet passed the tests designed to demonstrate their competence in performing the type and quality of weld required for the Zimmer cable trays. Mr. Hofstadter vividly described the concern at Husky over this lack of qualification. (See direct testimony following T1153). Mr. Hofstadter further described the attempt by several welders who were eventually certified to re-instate their certification, which had lapsed. They

failed. For this reason, Mr. Santa ordered that no recertification tests take place, and that all records concerning the tests which were failed be destroyed. (T1261-1265). While Mr. Hofstadter does have litigation pending against Husky concerning his termination from employment, his testimony is credible for several reasons. It is confirmed by the testimony of Applicant and NRC Staff witnesses. Mr. Hofstadter's demeanor on the stand, as well as the detail with which he recalled events, make his testimony believable.

c. Mr. Vandel and Mr. Westcott were called to testify on behalf of the NRC Staff. These individuals testified that cable tray welding at Husky was performed by unqualified welders. (T1767).

3. Cable trays currently installed in Zimmer are constructed with improper welds. This finding is based on the following testimony:

a. Mr. Hofstadter testified that Husky's incentive program encourages welders to work as fast as they can - since they earn more money if they weld more pieces in a given time. It is more difficult to produce a quality weld at a fast rate of speed. Fast welding promotes poor welds. This is even more true when welders have difficulty producing quality welds at even the slower pace of a qualification test. (See direct testimony following T1153 and T1274.) Mr. Hofstadter further testified that as a general rule, welders who do not pass qualification tests do not produce good welds in production.

(T1491-92). This testimony is not contradicted by any other testimony, and is confirmed in part by testimony of witnesses for the Applicants and NRC Staff.

b. Fred Banta testified that when welders of low skill work at high speed, poor quality welds are produced. (T1083) Mr. Banta further testified that welds were only inspected visually, and that not even all welds were so inspected. Only one in ten welds were even inspected visually. (T1092)

c. Mr. Borgmann, a witness called by Applicants, testified that cable tray welds were not inspected by means of x-ray, but that they were only inspected visually. (T1087)

d. Mr. Schweirs, a witness of the Applicant's, testified that visual inspection of cable welds was made only after galvanization, and that after galvanization, hairline cracks will not show up on visual inspection. (T1106)

e. Mr. Westcott and Mr. Vandel testified on behalf of the NRC Staff. They conducted an investigation of Mr. Hofstadter's allegations concerning the welding on the cable trays. This testing did not include testing of TIG welds (T1703). While they did visually inspect a few of the approximately 1820 TIG welds on Zimmer cable trays, they did not perform any destructive tests (T1708). While Mr. Vandel and Mr. Westcott discovered that some welds were produced by unqualified welders, they made no attempt to discover which welds were so produced (T1742). Of the 143 hours devoted to this inspection, only two or three hours were devoted to transition pieces - that is, the curved pieces of the cable trays (T1676).



4. Defective welding on cable trays at Zimmer poses a safety hazard. This finding of fact is supported by the following testimony.

a. Mr. Borgmann, a witness called by the Applicants, testified that the cables carried in the cable trays perform a fire protection function, in that fire equipment is carried in them. (T1097). Fire at the Browns Ferry Nuclear Reactor cable room caused a near catastrophe several years ago. For this reason, the need for safety concerning cable fire safety, cannot be overemphasized.

b. Mr. Hoistadter, the witness called by MWPP, testified that when a weld breaks, it breaks with sharp, jagged edges, which would be sharp enough to cut a cable. (T1295). Mr. Hofstadter further testified that during a visit to Zimmer in 1978, he noticed that the trays appeared to be overloaded. This caused him concern since he was assured that they would not be loaded to capacity. He testified that the added stress caused by overloading was a dangerous situation, which could lead to weld failure. (T1181-1182).

c. Mr. Vandell and Mr. Westcott testified that during an earthquake, a weld could come loose, thus allowing a side rail to fall off a tray and cut cables. (T1779). They testified that they did not check for overloading of cable trays. (T1720).

#### Contentions 15 and 16

##### Contention 15

Control rods which must be easily inserted into and removed from the reactor core have been inadequately manufactured so that they do not meet

the size specifications for such control rods.

#### Contention 16

Almost all of the seals on the control rods, which when properly set prevent radioactive water from leaking out when the reactor is shut down for maintenance, do not meet minimum specifications for smoothness. Rough seals cannot set properly, making servicing more difficult and unnecessarily endangering workers and the general public by causing leakage of radioactive water.

5. Control rod blades which have been installed in the Zimmer plant exceed the specification which requires them to not exceed .280 thousandths of an inch in thickness. This finding is based on the testimony of Thomas Dean Martin, a witness for MVPP (T2444 et seq.).

6. Control rods installed at Zimmer contain foreign particles on them which were not removed with cleaning. These foreign particles are contrary to specifications for the plant. This finding is based on the testimony of Thomas Dean Martin (T2444 et seq.) as well as the testimony of all other witnesses concerning contention 15.

7. Control rod seals which have been installed at Zimmer do not meet the specification for smoothness which is required. This lack of requisite smoothness could result in leakage of radioactive water. This finding is based on the testimony of Thomas Dean Martin, as well as that of other witnesses for both the Applicants and NRC Staff. (T2444 et seq.)

#### Contention 17

Fire insulation material which is being used to protect the cables in the cable trays from fire is inadequate to protect the cables in

light of the cable tray installation design and cable tray load. The tests of the fire insulation material were improperly performed in that conditions which will exist during operation were not adequately simulated.

8. The Board is not impressed with the testimony of the Applicants' and NRC Staff's witnesses. For this reason, the Board finds that the fire insulation material which is being used to protect the cables in the cable trays from fire is inadequate to protect the cables in light of the cable tray installation design and cable tray load. The tests of the fire insulation material were improperly performed in that conditions which will exist during operation were not adequately simulated.

#### Contention 13

The equipment used in the construction and operation of the plant will be excessively costly and, in effect, beyond the financial capability of Applicants. Applicants are financially unqualified to operate the plant because of escalating costs.

9. Applicants have grossly underestimated the amount of money they must escrow each year to cover anticipated decommissioning costs. This finding of fact is based on the following testimony:

a. Applicants did not undertake any independent study of decommissioning costs relative to Zimmer. See testimony of Mr. Chitkara, a witness of the Applicants. (T3637)

b. Applicants did not check the accuracy of the Atomic Industrial Forum Study, upon which they based their calculations. (T3638)



c. Applicants have a long history of grossly underestimating costs. For example, the cost of Zimmer is now more than five times the original estimate. See testimony of Mr. Borgmann, a witness for the Applicants. (T4004)

d. No plant of comparable size has ever been decommissioned. (T4010)

e. In calculating the cost of decommissioning, Applicants took a credit for the value of the land occupied by Zimmer without taking into account the adverse impact the occupancy of a nuclear power plant for 33 years of operation, and over 100 years of entombment, would have on land values. (T4024)

f. In calculating the annual deposit required to create a fund for decommissioning, Applicants assumed an annual inflation rate of 6.5%. Applicants presented no convincing testimony which would lead us to the conclusion that such a low rate of inflation would prevail. They, in fact, testified that they have no idea what the inflation rate will be over the life of the plant and its entombment. (T4022). The Board is more persuaded by Dr. Estes' (MVPP's witness) estimate of 8% - 10% annual inflation rates (see direct testimony). Applicant's low estimate is not in keeping with the necessity of fiscal conservatism in order to insure the safe operation of Zimmer, and will result in a large deficit of funds at the time when such funds are needed most -- decommissioning. At decommissioning, no further funds will be collected from consumers since the plant will no longer be useful.

g. The Board finds most convincing, Dr. Estes' calculations based on a 10% annual rate of inflation and a 12% annual rate of return. At those rates, an annual deposit of \$98,961,000.00 would be required to produce a fund that Applicants say they will need to accomplish decommissioning. (T4364 and Applicant's direct testimony). The Board believes that this figure should probably be higher since Applicant's have failed to consider the possibility that the plant may not operate 33 years. In addition, Applicant's track record concerning the estimation of costs, combined with the fact that no comparable nuclear reactor has ever been decommissioned, leaves us no alternative other than to conclude that Applicants have failed to adequately provide for decommissioning costs.

10. Applicants do not have the financial capacity to withstand an accident of the severity of TMI. This finding of fact is based on the following testimony:

a. Mr. Borgmann, a witness called by the applicants, testified that Applicants have made no specific plans to deal with the financial aspects of an accident such as TMI or a long-term outage. (T3654)

b. Applicants testified that during an extended outage, Zimmer might be taken out of the rate base. (T3659)

c. Zimmer would cost the Applicants \$197.4 million per year even if it is inoperable. (T3683)

d. An accident at Zimmer of the severity of TMI would adversely affect the financial well-being of Applicants (T4060-4063, 4070-4078, 4097)

e. Under current Ohio law, the cost of an accident would not be passed on to consumers. (T4113-4119)

f. None of the Applicant utilities have calculated the impact on each company in the event that one of the other companies cannot meet its obligations concerning Zimmer. (T4123, 4133)

g. The Board has not given any weight to the testimony of Michael Karlowitz, the NRC Staff's witness for the reason that the Board finds Michael Karlowitz's reasoning and analysis to be totally inadequate.

h. For the above reasons, the Board concludes that in the event of an accident of the magnitude of TMI, the Applicants can give no reasonable assurance that they could afford to pay for clean-up of such an accident in the event that the Public Utilities Commission of Ohio forced Applicants to remove Zimmer from the rate base. This Board believes that based on the state of the law in Ohio, as well as from the Pennsylvania experience, that it is more likely than not that the PUCO would remove Zimmer from the rate base. In that event, coupled with the other effects on financial viability testified to, the Board is forced to conclude that such an accident could not be paid for by Applicants. The Board views this inability as a serious deficiency and precludes the safe operation of the plant.

### III. CONCLUSIONS OF LAW

11. In an operating license proceeding, the Board is called upon to decide only the issues in controversy among the parties (10 C.F.R. §2.760a and Appendix A to 10 C.F.R. Part 2, Section VIII). In this case, the contentions and evidence have placed in issue the general subjects of compliance with 10 C.F.R. Part 50, Appendix I, cable tray manufacture, control rod design and manufacture, fire protection of cable trays, financial qualifications, emergency planning and environmental monitoring.

12. Based upon the foregoing Findings of Fact which are supported by reliable, probative, and substantial evidence as required by the Administrative Procedure Act and the Commission's Rules of Practice, and upon consideration of the entire evidentiary record in this proceeding, the Board makes the following Conclusions of Law:

(1) The requirements of 10 C.F.R. Part 51 have not been met;

(2) The requirements of Section 102(2) (A), (C) and (E) of the National Policy Act have not been met;

(3) The Board has thoroughly considered the foregoing Findings of Fact concerning the issues in controversy in this operating license proceeding and other matters which have been addressed in this Initial Decision and has concluded that the operating license should not be issued as proposed.

(4) Control rods as manufactured and installed are not capable of adequately performing their intended function.

(5) Cable trays as manufactured and installed are not capable of adequately performing their intended function.

(6) Cable trays for which additional fire protection is required have been wrapped in a material which was not qualified to perform its intended function.

(7) If the Moscow Elementary School were to be in use, the requirements of 10 C.F.R. Part 50, Appendix I would not be met.

(8) The Applicants are not financially qualified to engage in the activities to be authorized by the operating license in accordance with the Commission's regulations.

#### ORDER

13. WHEREFORE, IT IS ORDERED that the Director, Office of Nuclear Regulation is not authorized to issue Applicants an Operating License.

14. Exceptions to this Initial Decision may be filed within ten (10) days after service of this Initial Decision. A brief in support of the exceptions shall be filed within thirty (30) days thereafter, (forty (40) days in the case of the NRC Staff.) Within thirty (30) days of the filing and service of the brief of the Appellant (forty (40) days in the case of the Staff) any other party may file a brief in support of, or in opposition to, the exceptions.

IT IS SO ORDERED.

FOR THE ATOMIC SAFETY AND  
LICENSING BOARD

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Charles Bechhoefer, Chairman



Dr. M. Stanley Livingston, Member

Dr. Frank Hooper, Member

Dated at Bethesda, Maryland,

this \_\_\_\_\_ day of \_\_\_\_\_, 19 \_\_\_\_.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Charles Bechhoefer, Chairman  
Dr. Frank F. Hooper, Member  
Dr. M. Stanley Livingston

In the Matter of

CINCINNATI GAS AND ELECTRIC  
COMPANY, ET AL,  
(William H. Zimmer Nuclear  
Power Station)

DOCKET NO. 50-358  
APPLICATION FOR  
OPERATING LICENSE.

CERTIFICATE OF SERVICE

I hereby certify that copies of MVPP's Proposed Findings of  
Fact and Conclusions of Law in the Form of an Initial Decision

\_\_\_\_\_ in the above-captioned proceed-  
ing have been served on the following persons by posting the same  
in the U.S. Mails, postage prepaid, this 5 day of June  
1981.

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